

# STUDY YOUR WAY THROUGH SCHOOL

by C. d'A. Gerken

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# STUDY YOUR WAY

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This is a new, revised version of a booklet published by SRA in 1947. An even earlier form of the manual was written for students at the University of Minnesota. Many of the basic principles should be credited to Dr. Charles Bird, author of *Effective Study Habits* and co-author of *Learning More by Effective Study*, and to Dr. W. S. Carlson and Dr. K. H. Baker who taught the "How to Study" course at the University of Minnesota. Much of the material has been borrowed from that reservoir called, for lack of a more descriptive name, "Common Knowledge."

c. d'a. c.

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**SCIENCE RESEARCH ASSOCIATES, INC.**

259 East Erie Street, Chicago 11, Illinois



# THROUGH SCHOOL

*C. d'A. Gerken*

Director of University Counseling Service, The State University of Iowa

*Illustrated by Cissie Liebshutz*

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*Manarayan*

J.E.H.T. West

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No. 5628

## THE HIGH ART OF GETTING WHAT YOU WANT

WE GROW up in all sorts of ways—physically, mentally, and emotionally. And we grow up educationally. As we progress from educational infancy toward educational maturity, we change. And so does our education. The later elementary grades were harder than kindergarten. High school is far more difficult than any of those earlier years of “basic training.” College work demands even greater efforts.

Often students aren’t quite ready for the increasing complexity that comes with increasing educational maturity. There is a lot of competition for time and energy—too many things demand attention every day. Often you may feel “spread thin.” You are constantly being given greater responsibility for working on your own. In high school and college, a lot is expected of you. You must learn quickly, learn thoroughly, make correct decisions. Your studying becomes more difficult to plan. Schoolwork becomes less and less a guessing game and more a matter of keeping up or wishing you had.

### It's a full-time job

Going to school is a job—a full-time one. It is, if you expect to exit at the end of your four years with more than a smattering of knowledge and a few pleasant memories. It’s probably not so tough that most of you can’t attend graduation exercises, of course. But you’d like to graduate with better than minimum grades and accomplish this with the least amount of effort so that you have time for more than just studying—so you’ll have time for the other good things of life—friendships, hobbies, work experience, and good times.

Many of you find it difficult to adjust to increasing demands of schoolwork as you grow up educationally. Sometimes it’s a couple of



**You probably realize that going to school is genuinely a full-time job.**

out work, it can be done more easily than you now do it. It can be done more easily if you realize there is a science of studying made up of psychologically sound tricks of the trade and short cuts which most of us have never learned to use. We haven't learned to use them yet, that is.

### **Life among the books**

It seems many of our former teachers and instructors have assumed that *somebody else* taught us the science of studying or that we picked it up by accident somehow. The truth of the matter is that nobody ever told us the facts of life—the kind of life that's led among the books.

This booklet tells you. We'll get the job done without threats, sugar-coating, or appeals to your sense of duty. We'll be straightforward, the cards will be dealt face up—at least while you're learning the game.

In this chapter we'll talk about the abilities and attitudes you'll need for getting the most out of school. Then we'll discuss planning study time and some of the facts about concentration. After that we'll go over methods for getting the most from your textbooks. We'll pass on some tips that help when you're learning a foreign language. And we'll show you ways you can improve your class notes and your exam-taking techniques.

There are just two things for you to do to make studying a lot easier:

1. Read this booklet (Time: 50 minutes)
2. Practice the techniques you need (Time: from now on)

years of hit-or-miss trying before you learn to study efficiently and successfully. At one time or another, almost all students have wished they could pick up some tricks of the trade for handling their schoolwork better and faster.

Advice is cheap. That's why so many people give it away freely. Everybody and his brother—and a few of his sisters—have a load of well-intentioned advice to offer on getting by in school, on outguessing your instructors, on squeezing by on your exams by quick cramming—in short, on getting what you want without work.

The point we want to make is that while studying cannot be done with-

So you're continuing! That commits you to a plan of action for improving your studying techniques.

Many factors enter into scholastic success and failure; entire books have been written about them, and there are still factors which we find impossible to understand fully. You've probably already been told about hard work, having a real goal in school, and the like. While these things are important, there are other less obvious but equally important factors involved in school success.

### **That gray matter**

First, **YOU NEED ACADEMIC ABILITY**—the ability to reason, to grasp facts, and to think straight. The amount of this ability varies with each person. But to be able to study at all and retain knowledge, some academic ability is necessary. Some people may feel they don't have this kind of ability, but almost all of us have a lot more than we use. With *this ability* plus an understanding of *how to use it*, your chances for a successful school career are good.

### **Curiosity kills only cats**

Second, unless you're merely marking time in school, **YOU NEED INTELLECTUAL MATURITY AND THE INTELLECTUAL CURIOSITY WHICH ACCOMPANIES IT**. The intellectually mature person won't shy away from courses just because he doesn't know anything about them or is afraid to venture into something new. Try taking a few chances.

If you want to get the most from school life, make a point of investigating areas you don't know much about. You'll probably discover some courses you'll really like. If physics seems interesting, but you don't know exactly what it's about, spend half an hour reading the article on physics in an encyclopedia. If you're curious about economics, take time to glance through a textbook on the subject. Or talk to someone who teaches the subject; he'll be able—and willing—to discuss the field with you. You can't possibly lose, and you have a lot to gain.

When the time comes to choose elective courses, the intellectually grown-up student won't just take the easy way out—a few simple courses merely to get credits. He'll take a course of special interest or try an unfamiliar subject which will give him background and help him find out what field he'll eventually want to specialize in.

This is a world of specialists, but experts must understand the relationships between their own fields and other fields. Not even geniuses can live in a vacuum. So for a successful future, it's best to know a good deal

about a lot of different areas of knowledge. Try to understand the problems that workers in various fields have to solve—and try them out on your own mind. If you approach your studies from this point of view, you will become better educated, and your grades will be better. There is a difference!

### Special emphasis on specialization

Third, although you should be as broadly trained as possible, YOU NEED TO BE THINKING ABOUT THE FIELDS IN WHICH YOU ARE MOST INTERESTED AND IN WHICH YOUR CHANCES FOR SUCCESS ARE GOOD. You can take advantage of related courses and, at the same time, take other courses that will give you a general education. Do your planning always in terms of your actual interests, skills, special aptitudes, and general background as they all are related to the fields of your choice.

If you're not sure of your plans, arrange for educational and vocational counseling. Talking these matters over usually helps you understand the problems and some of the answers. Your counselor can often help you make your plans. Often you may find out there are many fields you could plan on which you hadn't even considered earlier.

Remember, every person is different. All of us have assets and liabilities. If you know your particular assets and liabilities, if you build on your strengths and don't underestimate your weaknesses, you'll increase



Many students are highly unrealistic in thinking about future occupations.

your chances for success. It's not true that you can do "anything you set your mind to"; mere ambition is not quite enough. It has to be backed up with ability to learn the tasks involved.

Just to start the ball rolling, ask yourself the following questions: Is my clerical ability good enough for a job in an office? Am I deft enough with my fingers to do good laboratory work? Do I get along with people well enough to get into selling or public relations? Could I really be a top-notch mechanic? Do I read rapidly enough to cover all my school assignments? Is my interest in science a professional interest or is it merely a layman's curiosity? Is journalism a romantic choice or a sound one?

### **Goals for today**

Once you have chosen the general goal toward which you plan to work—and this goal may be to enter certain occupational fields or to get a college education or to work your way up in industry or to write TV commercials or anything else—you have every reason to do your best. But since your goal is likely to be several years away, **YOU NEED TO SET UP INTERMEDIATE GOALS**—finishing tomorrow's assignment, getting good grades on next week's tests, doing a top-notch job on the theme due next month. Sometimes the faraway goal is so remote that today's work doesn't seem to count. You may feel that all the important work toward your goal will have to come later. Let's see how this idea works in a practical situation.

Some baseball teams have felt that losses early in the season didn't count for much—that the important games were those played near the end of the season. But when the team standings are compiled, it is found that the early games count just as much as those played in September. Exactly the same principle holds for schoolwork. The early and intermediate goals and successes count as much as the later ones. Actually, without the earlier successes, you will have little chance of achieving the later ones. You'll have no foundation to build on and no success habits.

Your success in school depends, in the final analysis, upon what you think it's worth to you and upon what raw materials you have to work with and how you use them. It's no different from working 40 or 45 hours a week on a job, except that you have more freedom and you're your own boss. Well, almost.

## STREAMLINE YOUR TIME

IN EVERY activity in which man is engaged today there is a premium placed upon "brains." The world pays well those with ability. But ability alone is not enough. You must be able to use that ability effectively. You must be able to do a good job within time limits. In other words, efficiency is necessary for success in our present-day living.

Competition, in school and out, is getting keener. Out in the workaday world, if someone can do something faster and better than you, he gets the first chance to do that something. In school, the person who works better and faster gets the higher grades. However much we dislike the tensions which sometimes go with this kind of living, we must nevertheless compete with others.

Most of us, on occasion, have come suddenly face to face with unfortunate situations that adequate time planning would have prevented. We get to a point where we've more to do than can be done in the time left. If you've ever had that "going around in circles" feeling, you know what we mean. The answer to this problem is all tied up with this business of efficiency we mentioned—of getting a good job done in a limited amount of time.

The first step to greater efficiency is planning how you will use your time to best advantage. How do you do this kind of planning?

### **Plan your study**

Rigid time schedules in which you allow certain definite amounts of time for classes, for studying, for eating—even for brushing your teeth—are cumbersome, too machine-like, and rather useless for most students. Students who follow them don't need them; students who might benefit can find more excuses for not following them than for using them.

But that doesn't mean you should live just from moment to moment. Take five minutes each morning to plan the day's work; you'll find it easier to get your studying done. In making and following your plan, there are a number of pointers to help you get the most good from your time.

### **Piecework on schoolwork**

In general, plan your studying by the job or assignment, rather than by the hour. You tend to work more efficiently; you work under self-imposed pressure, and you reward yourself by finishing the job. For instance, if you plan to study French for two hours, you may or may not finish the lesson in that time. If you plan to study French until you're finished, the chances are that you'll do a better job in less time. There's a penalty attached to daydreaming, too, when you work by the job; this penalty should help you learn to concentrate on your tasks. In other words, when you work by the job there's more incentive for doing the job quickly and efficiently.

### **Between classes**

Here's where a word about using free hours or study hours between classes should come in. Your day-to-day program probably allows you open time between classes. Often, you may have to spend this time where study conditions are not good. And often the hour will slip away and leave nothing in return.

With planning, these hours often can reduce much of your take-home work. Summarize what you just learned in the last class, or review for the next one. Do some of the studying which *can* be done without a lot of equipment or quiet. Make your free time pay for itself.

If you plan your study by the job, you can often use even shorter periods of time, which might otherwise be wasted, to organize the material you have to study or even actually to get some of the assignment done. Even periods of ten minutes or less—spent waiting for your date or on the bus—can enable you to plan your time. Then, when you have study periods or an hour or two of free time, you'll know exactly what you should get done. This saves you time when you're ready to do your studying. You can start right in.

### **A timesaving device**

One study technique that's proved very successful and capitalizes on short five- or ten-minute study periods is the flash card system. Carry

around some small cards on which you write an English word or phrase on one side and on the other side, the equivalent word or phrase in your foreign language, or write a technical term on one side and its meaning on the other. Use these cards for learning scientific terms, formulas, dates in history, new vocabulary, authors and their works—in fact, almost any short material which you are expected to know by heart.

Carry your flash cards wherever you go. Recite from one side and check on the other side. The very fact that you practice often and at odd times adds to your learning. Six periods of ten minutes each spent learning technical terms or dates, for instance, are far more effective than one period of 60 minutes. And there is another advantage; besides doing a better job of learning, you save a lot of time.

Keep your flash cards and review them *all* twice a month or so. Those containing the information you really know (meaning that you can give the information aloud) can be placed in an inactive file in your desk; the others should be put back in the active file you carry around.

### **Relax now and then**

If you follow these techniques, you won't let your study go until you have to do it all at one long sitting without any breaks. Too much studying all at once isn't the most efficient way to get your work done. Ordinarily you will get more accomplished with less fatigue if you study about 35 or 45 minutes or so at a time. At a convenient point take two or three minutes "time out" and then return to your studies. Your rest period shouldn't be so long that you lose your "set to study." It should be long enough to permit you to relax a bit.

If you study intensively, occasionally lean away from your desk and stretch. You'll find studying will not tire you so much, and the muscular activity involved in stretching is actually relaxation. Since your eyes are being used constantly, they, too, need a rest every once in a while. So, from time to time while you're trying to plan the next step in your math problem or while you are summarizing an important point in your textbook, close your eyes. Make your studying good to the last droop.

### **Will you break down from too much study?**

How many hours should you study each week? Many students and parents are really concerned because they are misinformed about mental fatigue. They've heard of nervous breakdowns from overwork, of persons who worked so hard they became "jittery," of people who cracked under the strain of a tough task. But—and you might as well remember this the



**If you're studying hard, occasionally lean away from your desk and stretch.**

rest of your life—it isn't work that causes nervous breakdowns. It is the attitudes of the worker, plus pressures from many sides, plus inefficiency, all focused at once on a person who was potential nervous breakdown material long before overwork seemed to cause the breakdown. This ailment often permits some people to escape reality and responsibility when the going gets too tough. They need help as well as sympathy.

No, you need not fear mental fatigue because of long, hard studying. It has been shown that average, normal persons like you could continue multiplying four place numbers by four place numbers in their heads for hours without having accuracy or speed impaired very much. Of course, the persons involved in the experiment which proved this were trying to keep going—were interested. (Make a note of that last word.)

What we think of as mental fatigue is usually a combination of boredom and lack of real interest, plus possibly physical discomfort due to poor posture. Of course, if you're ill, you're not efficient—but that's not mental fatigue. And you'd better see your physician.

### **There's more to life than studying**

The fact that studying won't produce a nervous breakdown doesn't mean it's wise or necessary to study all the time. With a little planning, you should be able to get the combined work of going to classes and studying done in a 40 to 45 hour week. Of course, you may want to put in a little overtime just before your final exam.

Let's do a little arithmetic:

24 hours in one day

× 7 days in one week

---

168 hours in one week

— 56 8 hours sleep per night × 7 nights

---

112 waking hours

— 20 average number of hours in classes per week

---

92 remainder after sleep and classwork

— 24 hours for study each week, including periods between classes

---

68 hours left per week for eating, bathing, dating, loafing,  
shaving, dressing, meetings, and extracurricular activities

Which means there are over nine hours a day which remain, after all schoolwork is done, for time you can call your own.

If you're really *bright*, you can probably get by with less studying and make average grades—but if you're *really* bright you probably won't try to.

Poor students should plan to work a bit more than the 24 hours we've estimated. Keep a record of your actual time. If your record over a two-week period shows that you spend less than 10 or more than 30 hours per week studying, or if, despite studying by the methods you learn from this booklet, your grades are still low, make an appointment with your adviser or a counselor. Maybe something new should be added.

## Enjoy yourself

But if you're average in ability and you plan well, you can probably keep your studying within the 24-hour-per-week limits we've mentioned and have much of that 68 hours of unused time open to enjoy yourself. This is important in your school years. Mix with people. Go to dances. Have a hobby. Learn how to get along with others—fellow students, faculty members, your family, the man next door, and everybody else. We might say, "*Especially* learn how to get along with other people." Much of your future happiness will depend upon it.

It's important for you to have a good time while you're in school, not because it's your last chance, but because if you have a good time as a student, it almost assures that you will enjoy life when you're a student no longer. Planning your study time efficiently will give you time for a good time as well as improve your grades.

## BUT I JUST CAN'T CONCENTRATE!

"HOW can I learn to concentrate?" This is one of the hardest questions of all to answer—because it's the wrong question. We've never heard anyone say he had difficulty concentrating on a basketball game, or reading the comic strips, or listening to a fine old Louis Armstrong classic. Do you see what we're getting at? You already know how to concentrate on things you want to concentrate on.

So let's make another attempt: "How can I learn to concentrate on something that—at the moment—I may not really want to concentrate on?"

Many people get off on the wrong foot by starting out with a warming-up period. This is a period of time peculiar to students, and usually is devoted to sharpening pencils, making a phone call, looking up the assignment, getting a Coke, and searching for a comfortable chair. Then, all too often, it comes to an inglorious end when the student goes to sleep or to a show.

### Tricks of the trade

You don't need a warming-up period in order to do a good job of studying. There are no muscles to strain and no joints to wrench; certainly your brain doesn't require breaking in for each new study task. However, merely realizing these facts won't rid you of this time waster if you've become accustomed to it. But there are a few tricks which help you get under way immediately when you have to study. They help you concentrate on your studies when, frankly, you'd just a bit rather concentrate on something or someone else. These are about as close to honest answers as you'll ever get to the questions you ask about concentrating:

1. When you study at home or in your room, do *all* your studying

- at one table or desk, as far away from distractions as possible. Use this desk only for studying. *Only for studying.* Then you'll get in the habit and tie up the sitting-before-the-desk situation with studying. The very fact that you sit at this special desk releases impulses to study after you've developed the habit.
2. Study at your desk in a chair in which you cannot sink down; don't give yourself a chance to relax completely at your desk. Did you ever see a setter concentrating on a pheasant? He's not relaxing completely, either.
  3. Use a scientifically designed study lamp. The old "gooseneck" light or unshaded bulb are as much out of date as a kerosene lantern. Your study desk should be uniformly illuminated—no glare, no shadows, no light-and-dark spots. Ask one of the engineers at your electric company about avoiding these study disturbers. Use indirect or semi-indirect light. It doesn't have to come over your left shoulder, it need not be expensive, and you shouldn't waste good money on fancy blue or green bulbs. Some people need more light than others, so experiment until you have the right amount *for you*. The correct type of light will go a long way toward helping you concentrate.
  4. Have on the desk all—and only—those materials necessary for doing a good job of studying. No clocks. No playthings. No pictures of the "one and only."
  5. Many students report they enjoy studying once they have started; the really hard job is getting down to work at the beginning. Once you have achieved the "set to study"—once you start in with all the drive you can muster—you needn't worry about continuing. But be sure you make the initial start, and give it all you have.
  6. Work under pressure to complete the job as rapidly as possible. Accuracy first, of course. Then add speed.
  7. Get into your lesson with a self-questioning attitude. Practice, during study time, doing the things you'll be expected to do later at exam time. If you will be expected to answer questions rapidly, study by doing just that. If you'll be expected to work problems, study by working problems. If you'll have to write out analyses of sentence structure, practice writing out analyses of sentence structure. More on this later.
  9. Learn to take care of many things in life as routine, so you can do them without having to make decisions. You've learned this already for many activities—eating with a fork, tying your shoelaces, tuning to a radio program you want to hear. Learn this

procedure also for studying, for library work, for making flash cards. Develop the study techniques in this book until they operate automatically in your life. Strangely enough, instead of making life routine, this plan will actually give you more time for the non-routine and creative things in life. And it does wonders for concentration.

10. Don't—this is the only “don't” in this list—wait for an inspiration to strike you. It won't. Only artists can work by inspiration, and since what they call inspiration is interest plus ability plus application, it's not a passive thing even for artists. If you have interest, ability, and application, then your inspiration is already at work.
11. If you usually get along well in your studying—and we mean almost all of the time—but you just don't seem able to hit the books tonight, DON'T. If you've been studying regularly, missing study for one day won't flunk you. Notice, however, that it's very easy to rationalize and plead, “Well, the book said it's OK not to, if you don't feel like it.” It may be easier for you to remember this paragraph than any other one in the whole booklet. If it is, you probably shouldn't.

Most students could learn a lesson about concentration and planning from the athlete. No matter how hard he trains for a week before an event, if he hasn't been in training previously he won't be able to give anything like his best performance. If he is getting prepared for an



Don't put off your studying waiting for inspiration to strike. It won't.

event—the mile run, for instance—he concentrates on training over a long period of time by actually running the mile, not by walking the distance, nor by playing bridge. The same principles apply to academic events. Train for your examinations in the same way the athlete trains for his track meets. Train, over a long period of time, by doing the things you'll be expected to do, under the same conditions that will occur on exam day. Remember that *intensive* training for a week before finals is inefficient unless *extensive* training has been going on for a considerable time before the examinations.

## **What about radio and TV?**

And now let's tackle the question, "Should you study with the radio on?" If you ask for opinions, almost everyone says, "No." If we honestly look for an answer to the problem, we discover there seems to be no real evidence supporting one side or the other. Soft instrumental music may even help a bit under some circumstances; it may relieve the tediousness and loneliness of a long study session in your room. Singing, comedians' jokes, and commercials are distracting—much more so than music.

If you're accustomed to studying by yourself and listening to music, and if it is not too loud, there seems to be no real reason to give it up if you use efficient study methods. If you study with a group, which is not good under most circumstances, there's too much possibility of discussing the radio program instead of the lesson.

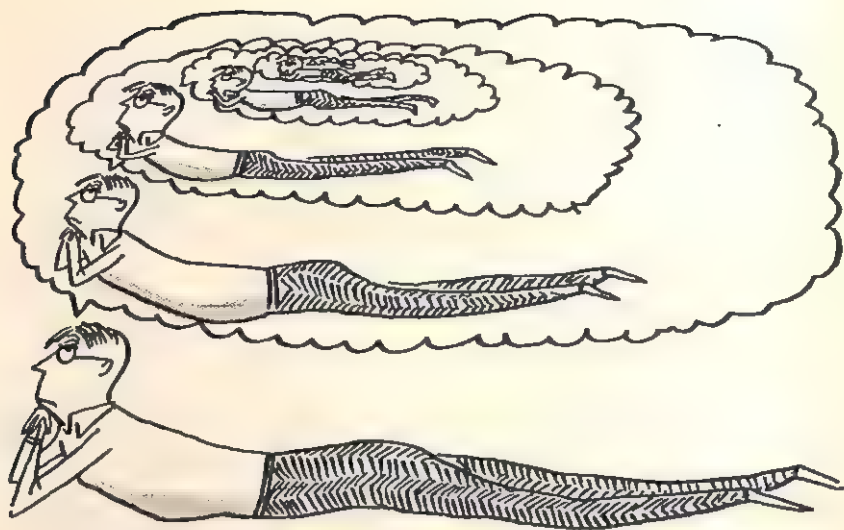
The final decision is left to you. You're the only one who can decide whether the radio keeps you from concentrating, and your own good judgment tells you what to do.

What about studying with the TV set on? If you can pay attention to TV programs and concentrate on studying a book at the same time, you probably have two heads. Since these study techniques are designed for people who are trying to do their best with only *one* head, you can answer the question better than any of us can. Let us know some time.

There aren't any rabbit-in-the-hat techniques for concentrating. There are no magic words or secret processes. Concentrating on trying to concentrate doesn't seem to help. Concentration is a sort of unconscious process which takes care of itself if you use efficient study techniques and if you are interested in the job you're doing.

## **Personal problems—and concentration**

There is, however, one more point which must be mentioned. You probably find it difficult to concentrate when you are worried or nervous



Concentrating on trying to concentrate won't help you to do your studying.

or irritable. If you're temperamental, if something keeps bothering you, or if you're unhappy, concentration often is impossible. Why? Because the very basis for these difficulties leads to daydreaming or some other escape from the real world. In other words, the cause of a continual lack of ability to concentrate may be a maladjustment of some sort. It may be major—it's probably minor.

There is something you can do about this. You can try to bring your problems out in the open and meet them face to face instead of just worrying about them or trying to deny them. Your counselor or adviser will be glad to help you over the hurdle, only you must take the initial step and consult him. Mass advice, such as "don't worry" or "forget about it" or "you'll get over it," is worse than useless. If you really cannot concentrate, look up someone who can help you.

Finally—remember the arithmetic on page 11. It's doubtful that your load of work is greater than you can handle unless, of course, your techniques of planning and studying are as out-of-date as a Model T. Efficient use of free periods plus a couple of hours of effort later on in the day should get your job done in time for you to live a balanced life. And that, too, helps you concentrate.

## HOW TO HIT THE BOOKS

BOOKS come in all sizes, shapes, colors, and designs. Before you're through with school you'll carry around, read, and study several hundred pounds of them. You'll also fill hundreds of blank pages with answers to examination questions. Do you know how to use books so you can fill these pages and make good grades?

Many students have been advised not to "work for grades"—as though this were not in good taste. Students are given many reasons for studying—to improve themselves, to meet tomorrow's problems, to get background, or because that's why they're in school, or because the boy next door is a good student. There are dozens of these reasons. But there seems to be a feeling that studying to make good grades is—well—not quite nice!

Let's face this—now! Getting good grades is not a long-range goal, like preparing for a lifetime occupation or learning all you can to help make adult life satisfying. But making good grades is one of those intermediate goals we discussed in Chapter I. Let's be honest enough to agree that studying for the best grades we can earn is a perfectly good reason for studying effectively. Let's earn our grades honestly and fairly and with attention to other things in life as well, but let's go after them. Few people who *do* make good grades are criticized if they get them honestly. Why not get your share? A good principle of textbook study is to use books in such a way that you'll write good examinations and make good grades.

The first thing to do with a textbook is, obviously, discover what it's all about. Do this by reading the preface, introduction, and table of contents immediately after you get the book. Several times during the first few weeks read them again. This won't take much time, but after three or four readings you should have the author's point of view.

You'll get ideas about problems that the author and others in his field have to deal with and why they're important. You will learn how to think like a historian or a botanist or a psychologist. That helps in getting the most out of any course you are taking.

These introductory sections of the book help you learn main issues to be touched upon throughout the course. Notice how often a whole book is condensed into the table of contents or the introduction. You have a real advantage in this early reading since you'll be able to tie up material you study in the future with this early overview. And we know that any tie-up of new material with past knowledge makes our learning faster, easier, and more permanent.

### Write it down

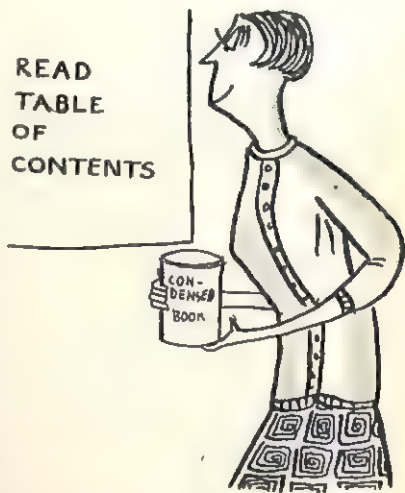
One important detail that needs mentioning here is the matter of assignments. How many times have you been given an assignment, trusted it to memory, and then promptly forgotten it? So you had to call all over town to find someone who *had* been smart enough to put it down in black and white. When you're given assignments, don't put obscure little marks in the book and hope to remember what you are supposed to do. Write the assignment down in enough detail so that when you take up your work, you'll know exactly what your job is. If the assignment isn't clear to you, ask your instructor for an explanation.

### Should you outline?

When you are given an assignment you'll probably be held accountable for what you read. But textbook *reading* becomes textbook *studying* only when you add some form of recitation so you can check yourself for accuracy.

Often students ask if they should outline a text. Go ahead, if you make it a kind of studying and learning situation and not merely a time-consuming one. Let's look into the private life of a student named

READ  
TABLE  
OF  
CONTENTS



Frequently the entire book will be condensed in the table of contents.

Pete. We present him sitting at his desk, book open; he is *copying* important points and ideas from the textbook into his notebook.

About all this method proves is that Pete can read and write. The words go "in" through his eyes and "out" onto his paper; chances are there is very little activity going on inside his skull. This method is obviously inefficient and leads students to wonder why, after all their "studying," grades are low. Instead of making a new table of contents—which is about all this type of outlining does for you—why not try outlining the text in your own words, in a way that will help you learn the material? The plan below has some real advantages.

### **A study method—new and improved**

The self-recitation text-outlining system has been investigated extensively by Dr. Charles Bird, a University of Minnesota psychologist. This system gives you practice doing what the examination requires before you take the exam. Instead of trying to learn algebra or history or physics, you learn to answer questions and think about *problems* you meet in algebra or history or physics. It emphasizes getting in training *to do* and *by doing* the things you'll be expected to do on exams.

This method of textbook outlining requires you to keep your book closed about 50 to 70 per cent of the time you're studying. "But," you ask, "how can I study if it's closed?" That, friend student, is just what we're coming to.

Here's the technique:

1. Read the assignment rapidly, spotting important division points, new words, definitions, and the like. Be sure you "hit the headlines"; whenever the author uses heavy type or starts a new topic, he is generally summarizing for you. Make use of his summaries. During the first reading your pen is on the table, and the only excuse you have for using it is for writing definitions of new words, technical terms, and important details on flash cards.
2. Reread the assignment, one section at a time. Read for content and ask definite questions, the answers to which will require that you know what you read. Planning questions is good study. Write these questions of yours on the left-hand side of your left-hand notebook page and, with text closed, write the answers to the questions on the right side of the same page. (Later you'll see how using your left-hand page will help you tie in your questions and answers on the text with the notes you take in class.)

3. After this is finished for one section, correct for errors or points omitted in your answers. Check for completeness and accuracy. Then go to the next section and handle it in the same manner.
4. After you've done this for every section in the lesson, and you have the whole assignment outlined, cover all the answers. Expose the questions one at a time and answer them as rapidly as possible. If you don't know the answers, this is the most appropriate time to get them. Answering the questions rapidly is important. In final exams you not only have to be accurate, but you're expected to finish in a specified time. It's good to get into practice early.

### **This is preparation for exams**

Do this kind of text studying by the job, not by the hour. Then you'll build up your interest in studying, you'll concentrate better, and you'll have more incentive to get the job done.

Once you are through, you've not only outlined your text in the best fashion but you also have a list of questions which will tie up definitely with the ones you'll have to answer on exams. If your outlining is done carefully, as a matter of fact, you'll have most of the examination questions right in your outline.

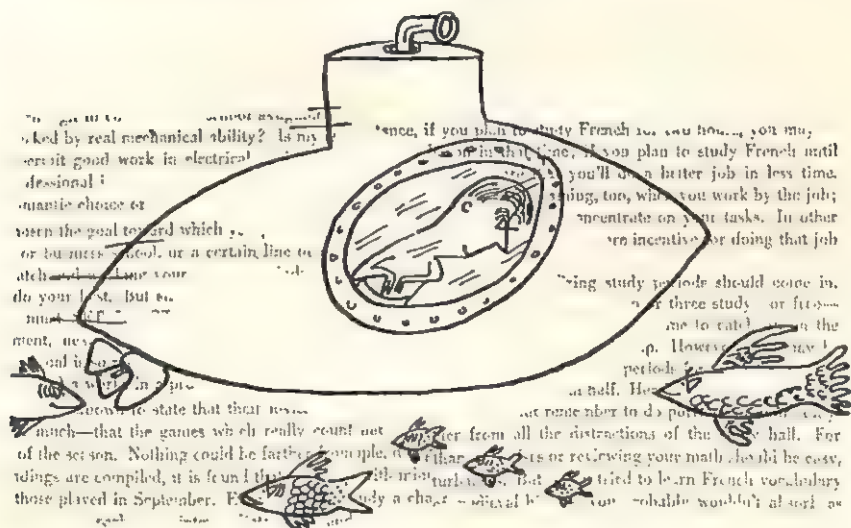
Often you will come across a question and feel quite confident you know the answer. This feeling can be very misleading. It may mean that you know just the question, *not* that you necessarily know all the answers to the question. If for any reason you are tempted to permit mere recognition of the question to take the place of actually answering it—well, you can guess what would happen if you met your final exam with that kind of knowledge. You'll be slow at first in your self-recitation. But you'll improve. The point is, it's worth it—not only in grades and knowledge and credits, but in actual wear and tear on your disposition and that of your family and friends.

### **When you're covering a lot of territory**

The outlining system above works fine for all courses except those in which your reading is extremely heavy. When this is the case, you may find you simply haven't time to cover every assignment in this manner.

Some students have found the following system of studying especially helpful for the social studies or other courses in which much outside reading is required. Suppose you are expected to study Chapter 14.

1. Read the main subjects in the chapter as they are outlined in the table of contents.
2. Now read through Chapter 14 very rapidly; skim it; read the main points only—the paragraph topic sentences and section headings. Try, while reading at this rapid pace, to tie this material to the material you obtained from the table of contents.
3. Start at the beginning of Chapter 14 again, still reading rapidly but going a bit deeper into the material. You may jot down important words, phrases, or clauses; do not write out whole sentences or paragraphs. Remember that making notes is of little use in preparing for examinations unless you combine them with some form of self-recitation.



The second time you read your text material, try to get a bit deeper into it.

4. Close your book and from your notes write a brief summary of Chapter 14. Here, again, use your left-hand notebook pages. Your summary need not be grammatical nor even in outline form. You don't need complete sentences. The main purpose of this outline is to bring together the contents of the chapter.
5. Open your book and rapidly check your outline with the material in the chapter, adding and correcting if necessary.

This system helps most when there is a great deal of material to be covered, and under such circumstances you will find it leads to increased efficiency in your studying. In addition, you get an opportunity

to test yourself, and you have an outline of the chapter for review and future reference.

## **Know what you know**

The idea back of this whole process of textbook studying is simple. It helps you study so that you know when you know your stuff, and when you *don't* know your stuff. If you know that you know, there's no problem. If you know that you don't know, you know how to solve that problem. But if you don't know that you don't know, your instructor may find out sooner than you do. And that is a problem.

## **More techniques**

For studying courses like biology and chemistry, in which many new terms and details must be learned, or courses like economics and sociology, in which you often learn new definitions for words you've used all your life, the device of word listing or idea listing is invaluable.

Word or idea listing is as simple as it sounds. You just make a list of all new words or ideas you come across, together with page numbers of the book in which you found them. After you cover the assignment this way, you have a list around which all the material you've studied can be restated. By self-recitation you can then tie up each word or idea on the list with the others and with the general plan of the material you've read. Since you have the page numbers, you can check your answers immediately for errors or omissions. And watch your vocabulary grow!

In many of your courses, much material can be shown most easily on graphs or charts. Although usually you will not be expected to remember all the details they summarize, you should understand the general trends and relationships which the author presents. Don't skip this sort of material when you are reading. If you have never learned to read graphs or charts, ask for explanations. Ordinarily it takes very little time to acquire the knack of understanding this type of material.

## **Reviewing is important**

Even though all the methods of textbook studying we've been discussing are helpful, few things are learned once and for all. Some sort of repetition is almost always necessary. For psychological reasons your first review should come very soon after you learn the material the first time. Why? Because you forget fastest right at the beginning. If you reinforce the original learning immediately, however, you will remember the material you study much longer.

In your reviewing you should employ the same general principles which you used for your first learning. Try to approach the material from a slightly different point of view if you can. Self-recitation or self-testing should be used as before, but you can tie more material together in your reviews than you can in original learning.



In a review, you can tie up all the text material that you learned earlier.

If your outline and notes are good, the process will be simplified. If you find weak spots, just bear down on them, and they won't be weak very long. For maximum efficiency, review a little on each subject each day; you'll find this reviewing will repay you many fold.

### **It won't take longer**

Already you may be exclaiming that you'll have to study 24 hours a day, 7 days a week to get your studying and reviewing done by this method. Sorry, but you're wrong about that. In fact, if you do this type of studying correctly, your actual study time should be shortened in proportion to the efficiency of your work. And, as one of your rewards, you'll never have to stay up several nights in a row just before final exams. If you do your textlook outlining and reviewing properly, the finest kind of final review will be a short "once-over" with plenty of relaxation and rest on the night before the examination. Then you'll come to the test the next day with a clear mind, a cheerful attitude, and a certain feeling of self-confidence which is very important for taking examinations.

## WRITE WHAT YOU THINK

WHY do you have to write themes and papers and reports? You don't intend to write for a living. You get along all right in your day-by-day living, writing and speaking just as you do now. Everybody understands what you're saying when you talk or when you write something. Well, perhaps you are right. Let's try to be open-minded for a moment. (This always means we'll try to show you you're wrong—it's a time-honored device in scholarly circles.)

Unless you look upon your school as merely a trade school to prepare you for some specific occupation, you realize you go to school to become a well-rounded, well-educated person. And as part of becoming well-rounded you must learn to express your thoughts and opinions and to describe the world around you accurately and effectively. You will need to learn to dig up facts and draw logical conclusions from them. Improving your writing ability will help you toward these goals.

### A practical art

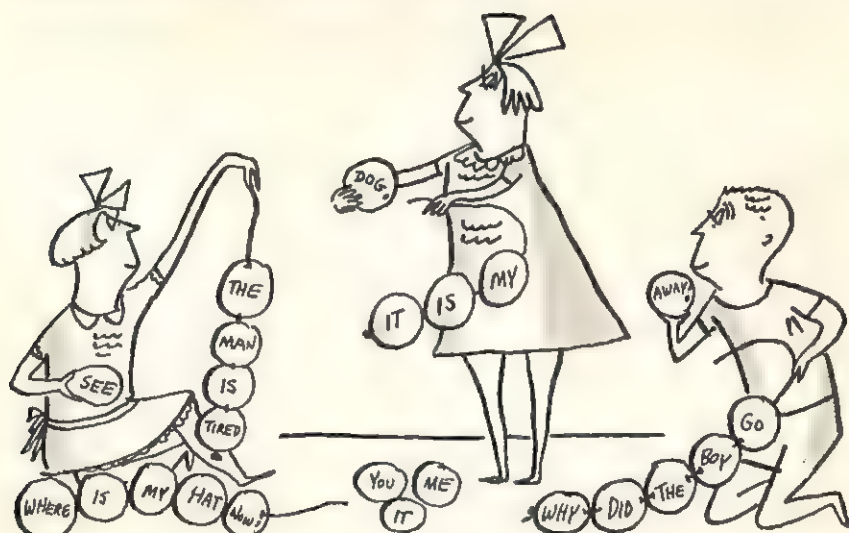
Businessmen, people in the professions, in research—people everywhere—are dependent upon written words. And these written words must be clearly understood. They have to mean the same thing to others that they do to you.

And writing has more than business-world, dollars-and-cents value. Your ability to enjoy literature and to understand clearly what is going on around you also depends upon your knowledge of the techniques of expressing thoughts and actions in verbal terms. Your ability to think critically depends upon how well you can understand and evaluate words and word meanings as they relate to the paragraphs and sentences which contain them. Shades of meaning which you have learned to use in your

own thinking and writing permit you to understand and appreciate meanings of other people. Besides, if you use good language, people will usually overestimate how smart you are. It all helps.

### Thinking requires words

We cannot think without words. Nor can we depend upon single words standing alone. Words must always be *working* words. Thinking and writing must always be in terms of words which are, so to speak, "strung together" in an acceptable fashion.



When you write, your words must be strung together in an acceptable fashion.

People must be taught how to "string words together." Writing is not a gift possessed by a handful of individuals; it is not magically acquired; it is not dependent upon inspiration. Good writing is developed—by writing. Learning to write is based upon the same principles we examined earlier: We learn by doing and by overcoming our errors. We learn by practicing the activity we want to master. It's that simple.

### It starts with thinking

The writing process begins when you start thinking about what you want to put on paper. Maybe a topic is assigned to you. But chances are the topic is just a few words—*My Most Frightening Experience*, *A Book Report on "Tom Sawyer,"* or *How the Student Government Can Be Im-*

*proved*. How do you expand these few words into an interesting, lively, well-organized composition?

### **Be an idea man**

If you find it difficult to expand an idea, try carrying around a few 3x5 cards. As you're walking from class to class or riding the bus or doing routine things in life, try to think about the subject of your theme. Think about your experiences which relate to the subject. Think about examples, contrasts, and vivid words which might be useful. Try to plan your ideas in terms of the impressions you want to give the reader. As soon as you have an idea, *write it down*; don't trust to memory.

### **The library can help**

When you really want to dig into a subject—when you want accurate information or expert opinion, depend upon your librarian. Don't just ask her to hand you a book. Ask her how you can find what you need and go after it yourself. Ask about the local ground rules for your library. You'll find there's a lot more in it than stacks of books. For the research involved in writing, your library is your best bet. To keep track of the material you find, put your facts on more 3x5 cards as you are actually doing your research work.

If you use these techniques and jot down your ideas and the results of your library research, after a couple of days you should have so many ideas you'll not be able to use them all.

Now take the cards and cut them into strips, each containing one of your "bright ideas." From these, you'll be able to select main points for your theme and other ideas and facts which will help you make those points. Arrange and rearrange your strips several times on your desk top, until you have them in some logical order. Discard those ideas which are least useful. Ideas which remain may serve as headings in your outline and should help you develop the tone and tempo of your theme.

### **A skeleton in your theme writing**

From your notes, you can produce a full-scale outline of the theme you plan to write. The experiences of many professional writers have demonstrated the value of preparing an outline before actually writing copy. This saves time and effort and provides the framework about which you may build a coherent and meaningful theme. The outline is only the skeleton; whether the finished product conforms precisely to the

skeleton may be unimportant. The outline should be your servant, not your master. In other words, the outline is a means to an end, not an end in itself.

## Pen in hand

All right, you're ready to write. What tips do you need to know? What techniques will help you produce an interesting, readable script when you sit down and take pen in hand?

Your writing should be spontaneous—with a carefully planned spontaneity. This means that the devices you use to create interest, to keep a theme hanging together, and to build it logically, must possess rhythm and life and vividness. Although your finished composition may result from many hours of careful planning and revising, it should appear to be freshly and easily written.

Many professional writers achieve this spontaneity by writing rapidly—even carelessly and ungrammatically if this is the only way the pencil can keep up with the thinking processes—rather than by writing slowly and painfully. In most instances students, too, should try to write as rapidly as possible. Some of the sentences in your first draft may be poorly constructed, but if you have freshness and clarity you can condense and correct your sentences later. On the other hand, if your first draft is perfectly formed structurally, but is wordy and uninteresting in tone, revisions may not help you produce a fresh and interesting script.

## Some pointers

Even while writing at top speed, however, most successful writers follow certain basic rules:

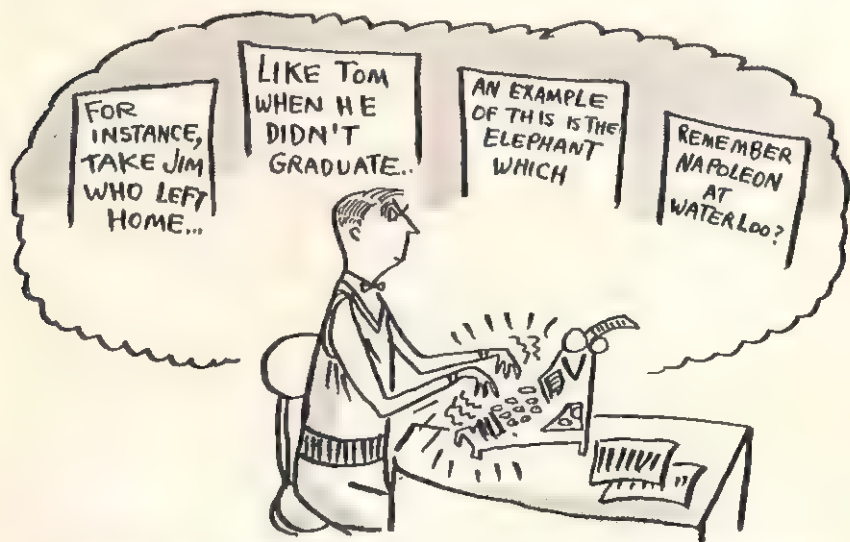
1. They use good, everyday English—neither slang nor the formal, “highfaluting” language found in wedding invitations and legal documents. They stay clear of words like “nuts,” “dope,” or “ain’t”—words you may hear in conversation but seldom see in published material. About the only time they use such words is when they are actually quoting what someone has said. At the same time, they seldom use words that sound stiff and pompous or that will send the reader in search of his dictionary.
2. They use action words that give the reader a picture of something happening, of transition, of movement and life. Their writing contains many lively verbs: *ran*, *jumped*, *looked*, *saw*, *stuttered*, *pushed*, *snapped*. They combine verbs and adverbs (words which show how, when, where, or under what circum-

stances an action was performed). Their articles and stories are full of verb and adverb combinations like *jumped over*, *turned around*, *looked up*, *rushed back*.

3. They go light on adjectives—words like wonderful, terrific, awful, beautiful, delightful—except when they want to achieve some special purpose. Words like these always must be carefully chosen if they are to be effective.
4. They keep sentences short—seldom more than 15 or 20 words in length—because short sentences make for clear, brisk, hard-hitting writing.
5. They use many illustrations, direct quotations, and real-life happenings to make their points and to keep readers interested. They sandwich these “pay attention” devices in between pieces of straight, explanatory writing to point up what they’ve been saying and to entertain their readers at the same time.

## Revise your work

Once the initial job of writing is complete, almost all good writers begin revising. They search for and cut out or replace words that are dull, stale, or trite. They try to find sentences or even full paragraphs which can be discarded—and throw them out. They make sure that ideas connect one with another and that their points will have impact on their readers.



Good writers use a lot of illustrations in order to put their points across.

Sometimes you may find it difficult to understand why sentences and paragraphs which at first appeared to be well chosen lose their flavor. Try, before writing the final draft, to have a friend read the theme aloud to you. Hearing your script read aloud often gives you insight into awkwardness and errors which may have crept in but which were not noticeable when you read the theme silently. This technique may have value out of all proportion to the amount of time and effort it requires. You will, of course, still have to reread your themes silently for technical errors.

### **Coaching on theme writing**

From time to time the themes you have written will be returned with comments. Unless you are exceptionally capable, your themes will probably receive some criticism. This indicates that your theme contains faults or inaccuracies which need correction; it also indicates that the reader has given your composition his individual attention and that he is convinced you should be able to improve your writing by following his suggestions.

Perfection—let us emphasize that word again—perfection is not gained by passive acceptance of all the corrections on your themes, nor by complaining about your grades; it is achieved by learning. And you learn through practicing writing correctly. Your instructor, by marking your mistakes, actually goes a long way toward helping you learn. He points out the specific faults which make your writing ineffective; he tells you why; he usually tells you how and where to discover more acceptable methods of writing; and he is glad to hold individual conferences in which you and he can discuss the problems together.

### **List your errors**

Keep a handy list of all the errors which have been marked on your themes and of any other errors you tend to make. Then, before you write the final copy of any theme, be sure to read it carefully, searching for these specific mistakes as well as for errors in general. If you know the mistakes you're looking for, you're more likely to discover them. In addition, you'll learn to avoid them in the future.

Of course, the techniques we've discussed won't completely rid your themes of all errors or guarantee *A* grades, but if you follow them, you will soon discover you are writing better organized, more interesting, more readable compositions.

## LEARNING TO LIVE WITH ANOTHER LANGUAGE

FOREIGN language study is a bugaboo to some students and a major interest to others. Contrary to general opinion, you don't inherit any special ability to learn the language of your native land. If you had been reared in China, you'd be speaking Chinese as fluently as you now speak English—and you'd probably wonder how anyone could learn English! Learning a foreign language isn't effortless for anyone, but using some of the principles mentioned below can make the job easier.

In probably no other subject is the principle that we learn by doing—that we learn through *activity of our own*—so clearly illustrated as it is in languages. But there are some tips which make this learning activity more efficient.

Learn pronunciation. Then you'll learn by speaking and hearing as well as by reading and writing. You'll get a "double dose" of the language if you pronounce well. In addition, there's a certain feeling of satisfaction you get if you speak another language.

### Thinking in a foreign language

When you speak, read, or write in the language you are learning, think of more than just the English translation. Get other associations or tie-ups as well. Form a mental image of the thing or action or quality. When you are learning that *el gato* means *the cat*, form a mental image of a cat, and think of other tie-ups such as meow, purr, furry, and the like. This is what your instructor means when he asks you to *think* in Spanish or German or French. This picture type of association is not always possible, but it is for most of the first words you learn.

And realize that a language expresses ideas or thoughts; it isn't just a collection of words. Even though the word order is peculiar—in German

one may say, "A by two horses pulled wagon down the road went"—you can understand the thought behind the sentence if you try to get it as a whole, not merely as a group of words in strange order. When you translate from English to other languages, you will use those peculiar word orders. The most efficient way to learn them is to practice using them; mere learning of rules is the hard way and not always the acceptable or useful way. Get the "feel" of the sentence or thought unit. Try, as you are pronouncing sentences aloud, to get as many word pictures as possible. It's the whole idea you want to think about.

## A simple trick

One difficulty with language study is that, particularly in translating from English to the other language, we have no way to check up on ourselves. To overcome this, start with some simple German or French which you can easily translate. Translate carefully a few sentences into good English, lay them aside for awhile, and then translate them back into the foreign language—without, of course, consulting the originals until you're done. In this way you see your errors immediately, and you can correct them immediately—all of which leads to better learning.

If you have trouble with vocabulary, don't make long lists to read over and over. Instead, use the suggestion given earlier; fill out small flash cards. On one side, write the English word; on the other, write the foreign language equivalent with the article preceding every noun. Carry



When pronouncing a foreign language sentence, try to see pictures of it.

the cards with you; shuffle them often; use them at odd moments, and watch your vocabulary increase. Instead of writing only words on the cards, sometimes write small phrases or sentences and underline the difficult word.

Verb conjugation can often be learned by variations of this flash-card system. Conjugations are also more permanently learned if you pick English forms at random and translate them into the other language; this is better than merely going down the lists of verb forms in the various tenses and modes.

### **A device for vocabulary study**

When you're studying a foreign language, you often look in the vocabulary section of the text for the meaning of a word. Suppose you place a pencil dot in front of each word you look up. Then, any time you have to look up a word and you find there is already a dot in front of it, immediately make out a flash card. This simple suggestion will save you many hours of misspent time, and, in addition, will lead to better grades.

When learning languages check up on yourself as soon after you do the work as possible; otherwise you may practice the incorrect thing. This, of course, is worse than no studying at all.

Finally, remember that your studying should give you practice in taking examinations. If your test is to be translation, study by translating; if your test is to be on verb conjugations, study by conjugating verbs.

Once you have a good start in your language, you can tie up anything in the future with this background. Then all your knowledge about the language is tied together; you know it as a living, functioning language of your own.

Think this over: If you learn modern slang, you can learn a foreign language. The process of learning each is exactly the same. You learn them by using them.

## TECHNIQUES FOR NOTE-TAKERS

TECHNIQUES we've discussed so far are used about equally in both high school and college. But one of the main differences between studying in high school and in college is that ordinarily class notes are relied on more extensively in college. In high school, class note-taking varies a great deal. Some teachers ask you to keep a lot of notes on materials covered in class; others may ask you only to take notes on assignments or on specific points they want to be sure you remember.

In college you attend lectures and take notes while the professor holds the floor. Then you may have a quiz or discussion section once a week with a small group of students. Here you discuss the subject and may have short tests. No one tells you what to study or how many pages to read. After studying your class notes and following them up by study in your text, you are expected to know and discuss that portion of your course which is currently being given.

Although class notes are more vital in college than in high school, you will find that a good notebook simplifies studying and helps raise your grades whether you're a high school freshman or a college senior.

### Note-making vs. note-taking

And there's no use postponing learning how to get a good set of notes. Confidentially, the job is not really taking notes. *Note-taking* is a relatively useless habit; but note-making, an entirely different process, is likely to become one of the most useful skills you will ever learn.

The difference between note-taking and note-making is often the difference between low grades and high grades. It is the difference between a half-hearted attempt to "take down" words—the in-one-ear-and-out-the-pencil-point method—and a real attempt to make meaningful, tied-up, rele-

vant thoughts of your own on paper—thoughts which are stimulated and put in order by the instructor. It is the difference between having things done for you and doing things for yourself. And as you have known for years, the “doing” process is what changes our lives. Here the emphasis is on practice—practice in doing the job right.

### Organized note-making for efficient learning

Now let's see what occurs when you make notes in class.

1. Your interest in a course is actually built up—even when it's a required course in a distasteful subject.
2. You pay more attention to the material covered in class, and this attention is one form of the activity-of-your-own necessary to learning. Paying attention can become a habit; it can be built up in the same way as any other habit.
3. You learn to tie up today's notes with those of yesterday and those of tomorrow until they are all interconnected. Then you really *know* your subject as a unit, in which facts are so tied up with others that they all seem to “jump up” at you when you need them. It's much the same as learning how to drive a car. If you learned to drive by learning to do each operation separately, your driving wouldn't be very skillful; you'd require a long time to become proficient. What makes your driving successful is that you learned to do the job as a unit with one operation leading to the others; each operation is tied up with all the others. This is the best way to learn.
4. You become successful in your schoolwork. “Nothing succeeds like success” means success in work or athletics or social life tends to become a habit leading to additional future successes.
5. When the time comes for a final review, you have enough organized material about the course to “spot” the final examination. Reviewing the notes which you have made yours throughout a whole course—which represent *your* thinking and your activity and your knowledge



If you make good class notes, facts you need will jump up at you.

—is the most efficient preparation for your examinations. Remember, however, that we are talking about reviewing, not cramming.

By developing better note-making techniques, you can gain all of these advantages.

Common protests are: "But all I can do is to take down what the instructor says, and he usually gets so far ahead of me I'm lost," or "I can't ever tie up what he talks about one day with the rest of the course," or, "I don't see *why* the instructor has to make every lecture so dry." And so on. Let's investigate.

If you don't make good notes, one of the following diagnoses seems inevitable:

1. You're careless.
2. You lack real interest in your work.
3. Your instructors are unable to make themselves understood; this usually means you haven't the background for the courses.
4. You actually don't know how to make good notes. If this is the correct diagnosis in your case, read on. If number 1, 2, or 3 fit you, you need more expert help than we can give here.

## Learn the rules

How can you make better class notes? You obviously can't use the same techniques you learned for outlining textbook materials. You need a new procedure. We'll have to get out the rule book for this. At first you'll have to learn the rules and abide by them conscientiously, just as you have to look up the rules of contract bridge or hockey or football when you start learning these games. And, just as you become proficient in them after practice and are no longer forced to follow every move in terms of the rules, so the rules for note-making will come to work in your life without your having to consult them at every point.

It will probably require some weeks for this gradual change to take place. So try consciously with full awareness of what you are doing, to make your notes according to the plan below for a month, adapting the techniques to the courses you're enrolled in. If you can learn, in a month of practice, techniques which will make your whole school career more successful and which will also provide habits serving you the rest of your life you've done a good month's work. Your job will be to learn and use some rules for making notes:

1. When you're listening to a lecture, get "set" to do so. This may sound as though you've heard it before, but if you're leaning rather forward in your seat, you'll honestly be more in the position for

- paying attention than if you're too relaxed. If you're sitting on the middle of your spine, you might as well be marked half absent.
2. Use a large notebook;  $8\frac{1}{2} \times 11$  inches is usually best. Then later on you can add outlines, mimeographed material, typed references, copies of term papers and reports, and the like.
  3. Date every page and place course name and number at the top. Time required: six seconds. Value: you never get lost.
  4. Write legibly and rapidly. Use abbreviations if you can understand them afterward.
  5. Keep your class notes on the right-hand pages, on one side of the paper only, so that you can use the left-hand pages opposite for outlining your textbook as suggested on page 19.
  6. Keep the notes for each course together and in order by:
    - a. planning a separate section of your loose-leaf notebook for each set; or by
    - b. using a separate  $8\frac{1}{2} \times 11$  inch notebook or a special section for each course. Side-opening, spiral-binding notebooks with index tabs have some real advantages over bound notebooks for this purpose.

## Work out a system

There are many systems of note-making. But few of them work as well as the one we're about to discuss. The system which follows is simple and flexible. Page layout emphasizes the importance of details as well as main issues. This system helps you summarize your notes, tie them together, and review them efficiently. It helps you test your knowledge and encourages parallel development of class notes and textbook outlines on pages facing each other. Here's the system.

1. On each *right-hand page* make two lines from top to bottom. One line should be about two inches from the left edge and the other, about one inch from the right edge. A notebook paper\* has been designed to save you the trouble of marking each page yourself.
2. Use the middle large section of the page to write down the class notes in your own words. Get everything important and make it yours. If there is a numbered or itemized list, get it. If a chart, table, graph, illustration, definition, equation, formula, new term, or any other aid to learning is presented, get it. These notes need not be grammatical, nor full sentences; they must be enough to help you

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recall the class discussion when you study them, and they must be yours.

3. Right after class is over, and the same day by all means, organize your material by making a summary or skeleton outline of your notes in the left column of your page. Use main points and cue words and brief phrases—your own ideas. This is your summary and first review. Draw a few lines or arrows in colored pencil from your main points and cue words to the material in the center section. These are tie-up aids. They bring your knowledge together. Use any devices you think of (brackets, numbers, underlining in color, "balloons" such as are used in comic strips, and the like) to make each page look different and to emphasize the tie-ups.
4. Review your notes thoroughly within 24 hours after you make them. Review by covering up the center section of the page and reciting aloud (or writing out, if you wish) all the details in it which are tied up with the skeleton outline or summary you made in the left column. Check on yourself to be sure. If you can recite your notes,

**Class notes**  
(see point 2) ↓

**Summary**  
(see point 3) ↓

2nd class  
1-2-3

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SAMPLE OF COMPLETED NOTEBOOK PAGE

you know them. If you can't, then this is the time to learn. Don't yield to the temptation to say to yourself, "Oh well, I know this; let's go to the next item." If you believe this, you probably *don't* know the material. Recite it or write it. Review by this method as often as you need to, of course, but be sure you review at least once very shortly after you've made your summary in the left column. Frequent review throughout the course is important. Ideas which aren't used frequently have a habit of leaving you. Some students may want to copy their notes, especially in courses which are of major interest. That's OK; type them if you like. But do the copying as soon after class as possible. One more caution—don't copy notes as a substitute for reviewing them.

5. During the week before an examination, make another review as in point 4, above. Then . . . .
6. . . . After you review each page, turn the page sideways and make a condensation along the right edge of the page—in the column on the right. You will merely condense the page into a few lines. This is the final condensation of your notes.

Some advantages of this system are: You have to review all your material in order to write the condensations; hence, this is an additional review. You tie all the information on a page together; so you're learning it all together, not merely in parts. Finally, when you want a quick overview of your notes, you merely turn your notebook sideways and lift the pages in order. There's the whole course, condensed.

Now don't be fooled; this is the only way cramming can be useful. Real reviewing, by covering the center section of the page and reciting (as suggested in point 4) is absolutely necessary here as elsewhere. But a glance at your condensations an hour before or the night before an examination will do wonders toward helping you recall the class material and will help you write a coherent, full, informative examination paper without wasting a lot of time and words and without becoming upset.

### **It's up to you!**

You now have a useful system of note-making. You've learned how to review. The rest is yours, and neither how-to-study courses nor pep talks nor threats of violence can compel you to make your notes efficiently or to use them efficiently. It's a matter of whether you will, not whether you can. The successful note-maker has done the major portion of the work of passing his courses by doing a good job with his notes.

## YOUR EXAMS AND HOW TO OVERWHELM THEM

CONTRARY to some student opinion, examinations are not academic mountains over which you must climb toward a diploma. Nor are they special torture devices for students. Examinations are merely yardsticks for measuring your knowledge. And they *do* help you learn. Anyway, exams are not peculiar to school life.

You don't stop taking examinations when you finish school; you only cease taking regular, planned tests over specific material. Throughout life, your business associates, your friends, your family, and people you have never even met will evaluate your success and your ability and your personality; and the grades they give you won't be as fair as the grades you receive in school. After all, those who educate us are usually experts in their subjects, whereas people outside judge us in the light of their biases, prejudices, and, all too often, their entire lack of ability to understand human nature.

So, examinations we have with us always. But you can prepare for those you take in school. You can follow some practical suggestions which improve your answers to test questions.

### Kinds of school exams

Ordinarily, your examinations will be of two types: objective (true-false, yes-no, completion, matching, multiple-choice) and subjective (long-answer, essay-type questions for which you must write out detailed answers in your own words). The course usually determines the kind of exam to be given.

Especially in your introductory courses, many examinations may be of the objective type. It may interest you to know, incidentally, that in almost all instances short-answer tests like these are more reliable than

essay tests for elementary courses. They sample your knowledge to a greater extent and permit you to draw upon your background information. You need not fear that tests of this sort are unfair. Remember that it takes your instructor much more time to devise an objective test than it does for him to ask you a half dozen essay questions. In advanced courses you will be more likely to take essay or long-answer exams so you can organize your knowledge about a subject.

The following suggestions are mostly applied common sense, although many of the facts behind these suggestions are not familiar to every student.

### On objective tests

1. On an objective test, find out whether you will be penalized more for wrong answers than for omitted answers. Your instructor will give you this information.
2. If a wrong answer counts the same as an omitted answer, answer every question. Guess, if you don't know; never leave a space blank. However, if you are penalized more for errors than for omissions—answer all the questions you know, and all those on which there is better than a 50-50 chance that you'll be correct. So, if you are not penalized for wrong answers, play *all* your hunches; if you are penalized, be more careful on your hunches.
3. When you go back over your paper, do not change guessed answers



Objective tests take many samples of your knowledge about a certain subject.

unless you made an obvious mistake in reading the questions the first time. On your guesses or hunches, your first guess is more likely to be correct.

4. Don't overemphasize one word in a question; this may change the whole meaning of the question to you, whereas the examiner expected you to answer the question as it would ordinarily be stated, without special emphasis on any one word. Be sure, however, that you know exactly what the instructor wants; if the question contains such qualifying terms as "always," "usually," "seldom," etc., be sure to take these words into account in answering. If some items are really confusing, ask about them—privately.
5. On multiple-choice questions in which you must choose from among four or five answers, you can usually eliminate all but two or three immediately. Then make your choice from those remaining. Your answers are more likely to be correct if you work this way than if you try to keep all the possible answers in mind at once.
6. On completion questions (those in which you fill in the correct word or definition or phrase) there is often more than one acceptable answer. So, unless you are heavily penalized for wrong answers, be sure to write something in every blank space.

### **On essay tests**

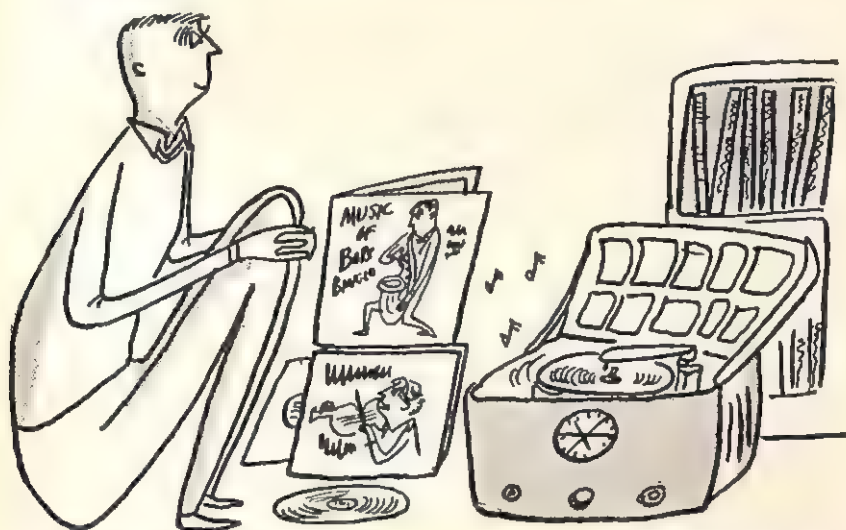
1. Be sure to read the directions and questions carefully. If every question has the same value, divide your time by the number of questions and never spend more than the allotted time on any one question—unless you finish the test before the time is up. If questions are of unequal value, make an adjustment in time for each. If you get stuck on a question, leave space for it and try the next one. Otherwise, you may not have enough time to answer the ones you do know. You can return to the hard question after finishing the others.
2. Read all questions before answering any. Sometimes a student writes a detailed answer to a question without reading the others. He may discover later, to his pained surprise, that another question asks for information he has already given.
3. If you are asked to describe, list, evaluate, sketch, outline, criticize, or discuss, be sure to do what is expected in your answer. If you should discuss, don't list; if you are asked to evaluate, don't describe. The instructor knows what he wants, and your grade depends upon the way you answer the question he asks, not some other question.

4. When you first read a question, important suggestions often come to your mind about various points which you could make. Write these on a piece of scratch paper *immediately*, and use them for further reference when you come to the proper place in the test. This is a legitimate method of gathering your thoughts. Furthermore, using such a piece of paper may serve to start your thought processes going when you're stalled.
5. Organize the answers to a question before you write them. As you organize, you'll usually think of several points you want to make clear. Think before—and while—you write. You'll save time, space, words, and worry, and your answers will be clearer.
6. Usually long answers earn better grades than brief ones. This doesn't mean you should pad your answers, but it does mean that complete answers are better than incomplete ones.
7. If the information you've given in answer to question 5 ties up with something in question 1, call attention to the fact. That's information about the course, too, and worth points.

### **On any kind of test**

1. Plan your final intensive reviewing for the weeks prior to test week and relax the night before your test. If you don't feel quite comfortable without a last-minute review, spend your time in a light workout or overview. Use your notebook condensations. Don't try to learn many details on the last night. You can't.
2. If you study the night before a test, go to sleep immediately afterward. Don't let any activity come between studying and sleeping; you'll be in better shape, and you'll remember more if you follow this rule.
3. Many students of mathematics and other problem-working courses do their daily problems rather leisurely and later discover that on examinations they are accurate but very slow; consequently, their grades suffer. Why not do your problems under pressure? As soon as you start on the day's problems, set an alarm clock to ring in an hour or so. Thus, you will be duplicating as much as possible the conditions under which you have to take tests. If you practice working with "one ear on the bell," you'll be surprised at the way you can develop speed without sacrificing accuracy. But be sure that you get the accuracy factor first.
4. If you don't know what kind of test you'll have, study as though you were going to have an essay test.

5. Don't spend all your time during examination week on reviewing. Have a good time; you need some recreation in order to function efficiently.



To do your best on tests, you will need some recreation during review week.

6. Keep yourself in good physical and mental condition during examination week. Get enough sleep.
7. Arrive for the test on time. Be sure you have all the equipment you'll need, but don't carry along unnecessary items.
8. Approach your test questions methodically. If you have studied by the methods you've been reading about, you'll be equipped to work your way through examinations without much difficulty. If you have waited to study until the last week, you cannot be critical about your answers. You may feel you've passed the test but later on, when you check your answers, you may discover you were clutching at half-thought-out facts.
9. Reread your paper before you hand it in, making corrections, additions, and any changes you find necessary.
10. Remember—it's not what you know that earns your grades; it's what you let the instructor know that you know. Even Dr. Einstein would flunk a physics test if he didn't answer the questions.

## HOW'S YOUR GRADE AVERAGE?

THE grades you receive probably will not surprise you very much. You know the kind of work you have been doing all along. But when your final grades appear in black and white there is a finality about them which may help you look back upon your work with increased understanding. Perhaps you will make a few resolutions; perhaps you will look for excuses; perhaps you will be pleased and expect to continue doing good work.

If you are satisfied with your grades, and if they are well above average, congratulate yourself; they'll probably remain above average throughout your school years and, other things being equal, you have every reason to expect success beyond school in activities requiring academic ability.

If your grades are low, whether or not you are satisfied with them, isn't it about time you had a conference with yourself?

People used to believe that low grades were disgraceful. Actually, they're not. There's no use becoming emotionally aroused about the situation. All that poor grades mean is that you have been unable to accomplish the work your school requires and that, unless you change or the school changes, your chances for success in academic work are limited. Low grades merely point to the fact that, under circumstances and conditions as they have existed, you do not do this type of work well and you might find some other course of study not only more profitable but also more satisfying.

Not all people can be successful students, any more than all of us can become successful salesmen or lifeguards or mechanics. If in spite of all you do, your courses just don't satisfy you and if you cannot "make the grade," you're likely to become discouraged. Or you may feel guilty about the whole affair. Or you just give up. Don't.

Perhaps your abilities and interests are not those required for academic work. There's no reason for supposing that you'll suddenly change. Why not fit yourself for some other field in which your abilities and interests *will* enable you to succeed? The fact that you're doing poor work in your present course of study does not mean you're doomed to failure; it means only that you should consider changing your course and choosing a career that doesn't require extensive academic training.

Many persons like to work—and work hard; many of these same people dislike studying. Many persons who like to study and work with real, concrete things can do this work successfully, although they may avoid abstract thinking and planning. Many students who dread opening their textbooks may be highly successful in dealing with people.

Why should anyone try to do the sort of things for which he is not equipped, when there are so many other tasks which he can do effectively? There's little use in trying to climb an insurmountable barrier when it's much easier to walk around it. And the world is full of many important jobs which need doing.



If possible, walk around barriers too difficult for you to get over.

that certainly doesn't mean that you might not become a good swimmer.

In other words, choose the athletic events and the studies and the occupations in which you can be successful. This is what is meant by "adjustment." It doesn't mean that you shouldn't try; in fact, it advocates trying—and trying hard. But it does emphatically state that mere trying is not enough.

Choosing your education and your way of living and your occupation demands a lot of careful planning and thinking. If your schoolwork is not as successful or as satisfying as you'd expected, even though you work hard, why not consider some other course of study in which you can feel successful and satisfied?

### Find the spot for you

There is, of course, a difference between giving up trying to do something and trying to find something you can do effectively. If, despite all available training, you cannot run the hundred-yard dash in ten seconds, there's little use trying to compete with others who can. But

Good luck—and good thinking along the way.

Practice makes perfect when you are learning how to study, but it must be practice doing the CORRECT activity. Check up on yourself regularly until you are using every technique you can use. Place an "X" in the proper space for each technique you are actually using in your day-by-day studying. Ask our counselor or adviser how to use this check-chart most effectively. The page number to the left of each technique listed refers to the page of the booklet where applying that technique is discussed in detail.

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## FOR MORE INFORMATION . . .

To supplement the information in this booklet, ask your counselor or librarian about some of the following materials. They are available at your school or public library.

**The Art of Plain Talk.** *Rudolph Flesch.* New York: Harper & Bros., 1946. This book is concerned with the art of writing simply and understandably. Students working with themes and book reports can find many helpful hints here.

**Effective Study.** *Francis P. Robinson.* New York: Harper & Bros., 1946. The purpose of this book is to give students practice in developing high efficiency in study skills. There are many suggestions on how to change principles of studying into workable skills.

**Experience in Reading and Thinking.** *Stella S. Center and Gladys L. Persons.* New York: The Macmillan Co., 1949. The main emphasis here is on how to get ideas and form opinions through efficient reading. Each chapter contains a section of words to increase vocabulary.

**A Guide to College Study.** *Robert W. Frederick and others.* New York: D. Appleton-Century-Crofts, Inc., 1947. This book contains information for both high school and college students on such techniques of studying as reading, skimming, using books, reading tables, cartoons, and maps, using the library, preparing tables, memorizing, and outlining.

**How to Pass a Written Examination.** *Harry C. McKown.* New York: McGraw-Hill Book Co., 1943. Here is helpful information on how to prepare for a written examination. Good study skills are also discussed.

**How to Study.** *Ralph C. Preston and Morton Botel.* Chicago: Science Research Associates, 1956. An activity text, with checklists and charts and questionnaires, to help you develop practical study techniques.

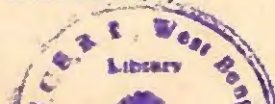
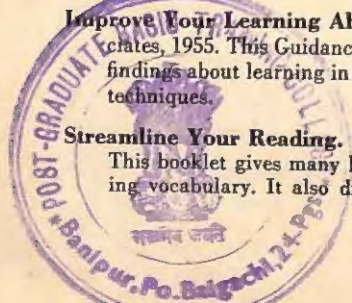
**How to Take a Test.** *Joseph C. Heston.* Chicago: Science Research Associates, 1953. This booklet is designed to help young people learn how to make the most of their abilities in preparing for and taking exams.

**Learn More with Less Effort.** *George Dudycha.* New York: Harper & Bros., 1957. Although this book was written mainly for college students, it can be a useful guide to everyone who wants to increase the efficiency and effectiveness of his learning techniques.

**Learning More by Effective Study.** *Charles Bird, Ph.D., and Dorothy M. Bird, Ph.D.* New York: D. Appleton-Century-Crofts, Inc., 1945. The authors describe the most useful means by which mature students can learn. This is an outstanding reference and the principles are based upon extensive psychological research.

**Improve Your Learning Ability.** *Harry R. Rivlin.* Chicago: Science Research Associates, 1955. This Guidance Series Booklet will help young people to apply scientific findings about learning in order to improve their in-school and out-of-school learning techniques.

**Streamline Your Reading.** *Paul Witty.* Chicago: Science Research Associates, 1950. This booklet gives many helpful hints to students on improving reading and building vocabulary. It also discusses how to use the library.





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